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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,606	12/14/2000	Pierre Leroux		8081

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EXAMINER

MAGEE, THOMAS J

ART UNIT PAPER NUMBER

2811

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/737,606

Applicant(s)

LEROUX, PIERRE

Examiner

Thomas J. Magee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections – 35 U.S.C. 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 3, 6, and 7 are rejected under 35 U.S.C. 102(e) as being as being anticipated by Zhou (US 6,172,409 B1).

4. Regarding Claims 1 and 2, Zhou discloses (Col. 6, lines 48 – 67; Col. 7, lines 4 – 13) a set of alignment structures, located within scribe lines (Figure 4) at the sides of rectangular die, consisting of a series of marks (12a – 12 d) (See Figure 1), each of which may include up to four discrete marks or “targets” (Col.3, lines 11 –32) at the midpoint along a scribe line for receiving a four-sided stepper shot with the scribe line at the periphery and “marks” at opposing sides of the stepper shot, wherein targets are in mirror-image positions and equal in length.

5. Regarding Claim 3, Zhou discloses (Figure 1) that an alignment target is located at each corner of the stepper shot.

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6. Regarding Claim 6, Zhou discloses (Col. 3, lines 47 – 52) (Figure 1) a second region containing a second set of alignment marks (14a – 14d) for receiving a second stepper shot having a scribe line along its perimeter, such that a segment of the scribe line of second stepper shot overlays a segment of the first stepper shot such that an alignment target of the second stepper shot overlays an alignment target of the first.

7. Regarding Claim 7, Zhou discloses (Col. 6, lines 57 – 61) that the alignment marks in sets have an alignment with respect to each other to include perpendicular, parallel or other combinations to include (Col. 3, lines 21 – 29) squares, rectangles, T-shape, or a cross shape.

### ***Claim Rejections – 35 U.S.C. 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou, and further in view of Wolf et al. ("Silicon Processing for the VLSI Era: Vol. 1" Lattice Press, Sunset Beach, CA., (1986), p. 478) and Banks ("Introduction to Microengineering," Demon Co., England (1999), p.2).

10. Regarding Claims 4 and 5, Zhou does not disclose the formation of targets by either a positive or negative resist process. However, the formation of features on a material (such as chrome) by these procedures is notoriously well known in the art. Wolf et al. discloses (page 478, Figure 21) the formation of "clear-field" (positive) and "dark-field" (negative) patterns, corresponding to transparent or opaque fields (raised or depressed features). Banks discloses (page 2, 3<sup>rd</sup> through 5<sup>th</sup> paragraph) how a negative image (depression on mask) is transferred through the process to a target to produce a positive feature or a negative feature. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to add Wolf et al. and Banks to Zhou to obtain a process for producing alignment targets by a positive or negative photoresist step onto scribe lines of a wafer surface to form raised or depressed target features.

### ***Response to Arguments***

11. Applicant's arguments in relation to claim rejections have been carefully considered but these have not been found to be persuasive. In regard to Applicant's argument (page 5, Response) that there is no indication of a stepper shot in the rejection for Claims 1 and 3, Examiner does not agree. The reference discloses "*a first region for receiving a four-sided stepper shot,*" as recited in the claim language, with a scribe line along the periphery, essentially identical to the recitation by Applicant in admitted prior art (Figure 2A, page 3, lines 5 – 11), wherein targets are located within the stepper shot, 12, and also along a perimeter of the scribe line.

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With regard to Claim 6, Examiner also disagrees with arguments of Applicant since the reference discloses, "*a second region for receiving a second stepper shot having a scribe line along its periphery*," as recited in the claim language. Applicant additionally recites, as a part of admitted prior art that multiple shots are done (page 3) to expose multiple areas, and a second shot to expose such regions is possible using the admitted prior art disclosed in Figure 2A.

Applicant has not provided any definitive probative data that would contradict the rejections previously stated in the Office Action. Therefore, the rejection remains.

### **Conclusions**

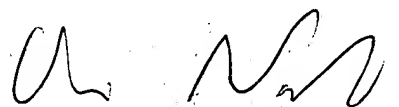
**12. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

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Examiner should be directed to **Thomas Magee**, whose telephone number is **(703) 305 5396**. The Examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM (EST). If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, **Eddie Lee**, can be reached on **(703) 308-1690**. The fax number for the organization where this application or proceeding is assigned is **(703) 872-9306**.



URI NADAV

patent examiner

Thomas Magee  
May 23, 2004